Prevalence of probiotic supplementation in well children: a PRISMA-P guided protocol for a scoping review

Introduction

Probiotics are "live microorganisms which when administered in adequate amounts confer a health benefit on the host" (Food and Agriculture Organization of the United Nations & World Health Organization, 2002: 8). Probiotics combined with prebiotics (support for the microorganisms) are known as 'synbiotics'. Probiotics have been gaining momentum around the world as a viable medicine for a range of acute and chronic health problems in children. The amount of literature on the topic has increased exponentially over the last 15 years, with a focus on both prevention and treatment. Understanding how probiotics are used in children at the community level will help shape the research agenda and allow exploration into the impact on acute and chronic illness, health service use and quality of life issues.

The aim of this scoping review is to: (1) map the literature around probiotic use in well children, with a particular focus on prevalence and (2) identify gaps in the literature. The questions the review will focus on are:

- What is the prevalence of probiotic use in well children?
- Which strains of probiotics are most commonly used by well children?
- Why do parents give well children probiotics?
- What do parents in this population perceive the impact of probiotics administered to their children to be?

Methods

Inclusion criteria

- any article reporting the prevalence of probiotic use in well children
- full text available
- available in English or able to be sufficiently translated into English with web-based translator software
- no date restrictions

Exclusion criteria

- clinical trials of probiotic supplements
- studies of children who are not under the care of a parent
- studies of children admitted to hospital
- studies of neonates or preterm infants
- studies focusing on a cohort with chronic illness e.g. children with inflammatory bowel disease
- studies focusing solely on probiotics from food sources such as infant formula or yoghurt
- studies of solely maternal use of probiotics during pregnancy or the perinatal period

Information sources

- Electronic databases: CINAHL Plus with full text (EBSCO interface, from 1937), HealthSource: Nursing/Academic Edition (EBSCO interface, from 1953), SAGE (SAGE journals interface, from 1999) and Medline (EBSCO interface, from 1966).
- Grey literature: Google.com, MedNar.com.
- Reference lists
- Hand searching selected journals: Archives of Disease in Childhood; Journal of Paediatrics and Child Health; Pediatrics International; Pediatrics.

Search strategy

One author will complete the search, consulting with a second author where there is uncertainty. The below search terms for Medline will be adapted as required for other databases:

'probiotic* OR synbiotic*' AND 'infant* OR child* OR p%diatric' AND 'prevalence OR parent* OR perceive OR perception OR reason OR why OR impact OR use'.

The draft search terms for the grey literature is: 'probiotic synbiotic prevalence child'.

Study records

One author will conduct preliminary screening, excluding citations where sufficient information is available in the title. Citations will then be exported to EndNote for removal of duplications and ongoing management.

Selection of studies will be made by one author, consulting with a second author in the event of uncertainty, through review of the abstract and full text as necessary.

Data will be extracted by one author and verified by another into a data charting form based on the fields suggested by Arksey and O'Malley (2005) and Peters et al. (2015): Lead author; year of publication; country of origin; aims; study population, sample size and selection; methodology; key findings (prevalence, other categories of findings are expected to vary across included articles).

Quality appraisal

Risk of bias will not be addressed as it does not form part of the methodology for a scoping review, however quality appraisal will be done using the Crowe Critical Appraisal Tool (Crowe, 2013) as it can be applied to a wide range of research designs.

Data synthesis

We expect to find a variety of types of studies, therefore a narrative and tabular 'map' of the results will be presented, with an emphasis on study characteristics and the primary outcome of prevalence. Other key areas will depend on the nature of the literature discovered.

References

Arksey H and O'Malley L. (2005) Scoping studies: towards a methodological framework. *International Journal of Social Research Methodology* 8: 19-32.

Crowe M. (2013) Crowe Critical Appraisal Tool User Guide. Version 1.4 ed.

Food and Agriculture Organization of the United Nations & World Health Organization. (2002) Guidelines for the Evaluation of Probiotics in Food. Ontario, Canada: World Health Organization.

Peters MDJ, Godfrey CM, Khalil H, et al. (2015) Guidance for conducting systematic scoping reviews. *International Journal of Evidence-Based Healthcare* 13: 141-146.